

# 76 People, Birds, and Bats



One of the 35 animal phyla—phylum Chordata—includes all species with backbones. Most of the chordates have a jointed backbone and are classified in the sub-phylum Vertebrata, or vertebrates. Although only about 50,000 vertebrate species have been identified (compared to about 1 million invertebrate species), the most familiar animals are vertebrates, such as humans, elephants, eagles, and frogs. How are vertebrates classified into smaller groups?



What kinds of evidence can you use to classify vertebrates?



## PROCEDURE

1. Carefully read the Classification Chart on the last two pages of this activity to compare characteristics of the five classes of vertebrates. “Cold-blooded” animals are animals that adjust their body temperature by moving to warmer or cooler locations. Their temperatures sometimes vary with the environment’s temperature, but they aren’t always cold. “Warm-blooded” animals regulate their body temperature to a fairly constant level by generating heat within their bodies, but they aren’t always warm. Because of this, scientists now use different terms to describe these animals.
2. Pretend you work at a zoo. Some people have discovered some strange vertebrates and ask you for help in identifying them. They have sent you letters containing pictures and descriptions of these creatures. You can find the letters on the following pages.

For each mystery vertebrate:

- a. Read the letter and look at the picture.
- b. Discuss with your group members which vertebrate class might include this species.
- c. In your science notebook, record which class you believe it belongs to and your reasons. You do not need to agree with your group members.

## ANALYSIS

1. What characteristics do you think best distinguish each vertebrate class?
2. Why do some vertebrates appear to fit into two or more different classes?



## EXTENSION

- Find out how technological advances are being used to study the various classes of animals on the *Issues and Life Science* page of the SEPUP website.

My husband and I were having lunch outside at our hotel in Mexico when I saw a small creature flash across the wall. I later saw a similar animal sunning itself outdoors. I'm enclosing a picture. The next day, I managed to catch one. It was sunning itself on a rock and its skin felt hot and dry, not moist. I could feel a line of bones along its back. As I held it, it seemed to get a little stressed; I noticed that it started to breathe faster. So I set it down and it ran off. We really liked these creatures and would like one as a pet. What kinds of animals are these?



J. Stirbridge

One of my kindergarten students brought in a picture of this animal. Harriette told the class that she saw one of these animals when she lived in New Zealand.



She said that it looked hairy and that it was very rare. Harriette and her dad saw the animal poke around for worms with its sharp beak. Her dad is out of the country and Harriette wants to do a project on this animal. What is it? Thank You.

Mr. Kaimus and Class K-1

May 23, 1860

My collecting party was recently in the new territory of Australia, where we were astounded to find a most amazing variety of strange and unknown animals. The animal I have sketched below appears to be truly new to the world of science. We have also made observations of these creatures in their natural habitat. They live in ponds and streams and are covered by dark fur. The animal has a bill like a duck, which it uses to find snails and food in the mud of the stream. We then observed something most extraordinary. The female lays an egg which she keeps in her pouch until it hatches. The tiny baby licks milk from the skin of the mother's belly.

What is your opinion  
of these mysterious new  
creatures?

Sincerely,

Murray Jones





MY girlfriend and I accidentally ran over this thing on our last road trip! Melia ran over to pick up the animal as soon as I stopped. The animal looked scary, but had some hairs poking out between the "scales." Although it was a cold night, Melia said its body was still warm. Melia wants to put up signs warning people to look out for these animals so that no one else accidentally runs one over, but we don't know what they are. She's an artist, so she drew a picture of it for you. Can you help us identify this animal?



Tim

Nina and I are in 5th grade. We love to go snorkeling near the reefs by my house in Guam. We saw some very strange-looking animals underwater. I tried to draw one for you. They have a head like a horse but they have a fin on their back. One day, we saw one of them moving around and then some babies came out near its stomach! The babies swam straight to the surface but then came back down. We watched and watched but never saw them go back up to the surface. How can they breathe? What are they?



Thanks, Thomaso

I was scuba diving in Thailand when I saw this long, striped creature, maybe as thick as my thumb, working its way along the bottom and sticking its head into holes. Its head was smaller than an eel's and I know that eels stay in their holes during the day. (This was a day dive.) Also, the animal was smooth and round, with no fins. I also noticed that it regularly went to the surface for air. Any ideas about what it is?

Phil



I am writing to ask you about some flying animals that nearly flew right into us when Pearl and I went caving last summer. We were near the entrance to a cave when I heard this twittering sound and saw some shadows fly past me. Pearl panicked and ran. She wouldn't go back to the cave. Later that night, I went exploring myself. When I shone my flashlight on the ceiling, I saw hundreds of really tiny animals hanging there. They seemed to be grouped together to keep warm because the cave was so cold. I think they were babies because they looked much smaller than the creatures I had seen before. I saw one of the larger creatures fly into the cave and go to one of the babies. The baby seemed to be getting milk from the adult. I was wondering if you could help me figure out what these things are.



Sincerely yours,

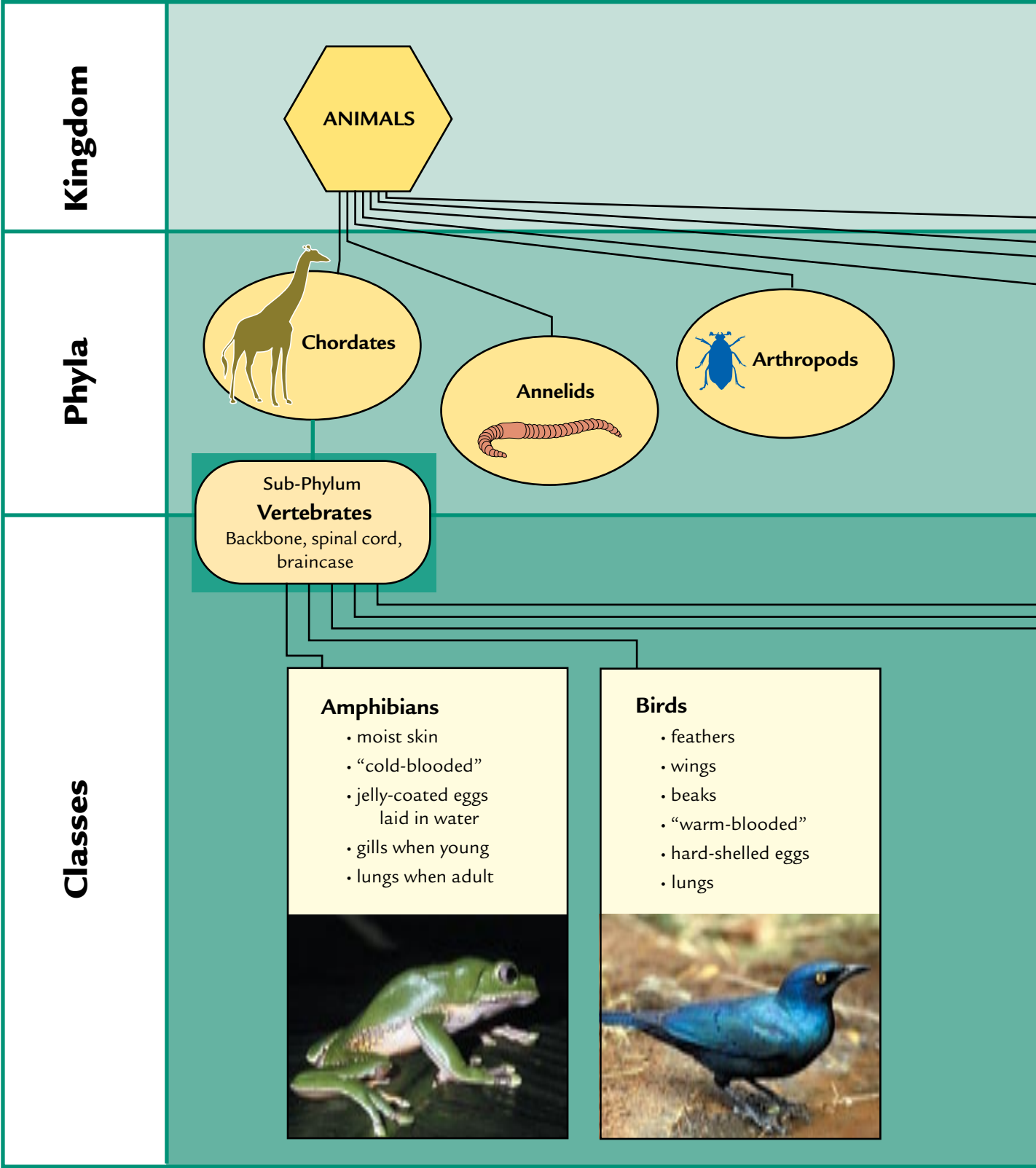
Thelma

From: Ruby Riter

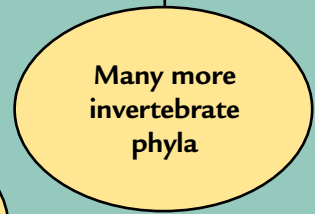
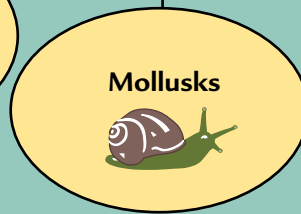
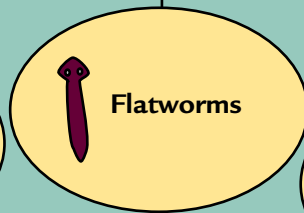
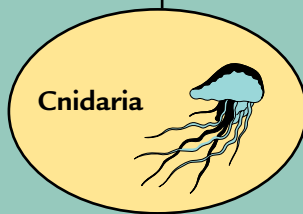
Subject: strange animal

I'm a travel writer with the Leisure Time Gazette. I was on assignment in Malaysia and saw these strange animals on the mud near mangrove swamps. I want to write about them for next week's travel section, but I need more information. I saw some of these animals swimming underwater, but I didn't see any of them come up for air. However, they seemed to do okay on land too. When I checked them out through a telephoto lens, I noticed that they had some kind of fin going down their back as well as scales on their bodies. Can you get back to me ASAP? My deadline is in three days. Thanks a lot.









**Bony Fish**

- scaly skin
- “cold-blooded”
- jelly-coated eggs laid in water
- fins
- gills



**Mammals**

- hair
- “warm-blooded”
- live young
- feed babies milk
- lungs



**Reptiles**

- dry scaly skin
- “cold-blooded”
- leathery-shelled eggs
- lungs

